Tobacco Surveillance Data Brief: *Youth Consumption of Cigarettes*

A joint effort between the Comprehensive Tobacco Control Program (CTCP) and the UMDNJ-School of Public Health, Tobacco Surveillance and Evaluation Research Program (TSERP). CTCP is administratively located within the Office of the State Epidemiologist, Public Health Services Branch, NJ Department of Health and Senior Services.

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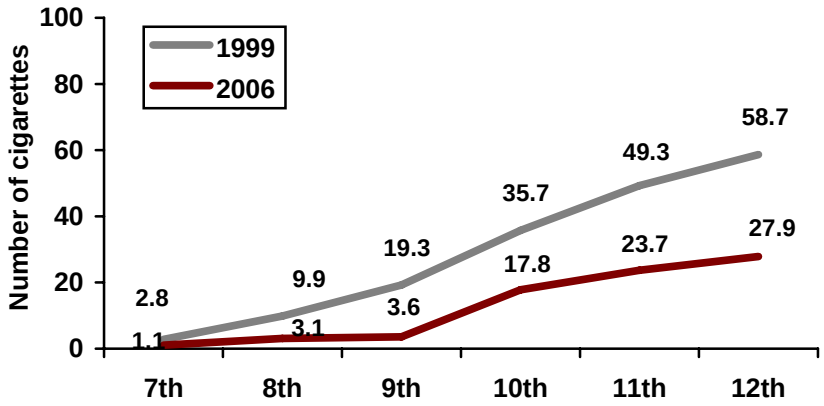
Per capita consumption of cigarettes

Prevalence estimates of youth tobacco use tell us "how often" but not "how much" youth are smoking. Using data from the New Jersey Youth Tobacco Survey (NJYTS), we estimated the average number of cigarettes smoked in the past 30 days for all middle and high school students by multiplying the number of days smoked in the 30 days preceding the survey by the average number of cigarettes smoked on days smoked. As shown in Figure 1, the average number of cigarettes smoked in the past 30 days increased dramatically by school grade. Compared to 1999, the average number of cigarettes smoked in the past 30 days by a typical student was notably lower in 2006 for each class year.

Figure 1. Average number of cigarettes smoked over a 30 day period, by school grade – NJYTS, 1999, 2006



Monthly and annual consumption of cigarettes

Although the average number of cigarettes smoked in the past 30 days provides a profile of the typical middle or high school student, it does not illustrate the volume of cigarette consumption by youth. Total 30-day consumption was calculated as the average number of cigarettes smoked by middle and high school students in New Jersey in the 30 days preceding the survey multiplied by the estimated population size for each school grade. As shown in Table 1, an estimated **351,458** packs of cigarettes were smoked by middle and high school students in New Jersey during

New Jersey youth consume almost 90 million cigarettes or 4.2 million packs of cigarettes annually

the 30 days preceding the survey; high school juniors and seniors were responsible for two-thirds of the youth consumption estimated herein.

We assumed annual cigarette consumption as constant over one year and multiplied the 30-day cigarette consumption estimate by 12 to determine the estimated number of cigarettes smoked by 7th to 12th graders in the State. Annual cigarette consumption among 7th through 12th grade students was estimated at almost 90 million cigarettes or 4.2 million packs of cigarettes. Annual youth consumption in 2006 was considerably lower than that in 2001 (6.2 million packs of cigarettes) (Delnevo, Muthurajah, Brown, Hrywna and Malka, 2002), and marginally lower than 2004 (4.3 million packs) (Delnevo, Hrywna, Chee and Momperousse, 2005).

Table 1. Average number of cigarettes smoked in the past 30 days and annually - NJYTS, 2006

School Grade	Average no. of cigarettes smoked in past 30 days*	Packs of Cigarettes Consumed†	
		per 30 days	per year
7	1.1	5,889	70,662
8	3.1	15,743	188,919
9	3.6	19,705	236,463
10	17.8	92,846	1,114,157
11	23.7	112,006	1,344,069
12	27.9	126,901	1,522,811
Total		**351,458**	**4,217,500**

* single cigarettes
† 20 cigarettes to a pack

Tax revenue from youth cigarette smoking

We multiplied the estimated number of packs of cigarettes smoked annually by youth by the state excise tax rate for a pack of cigarettes at the time of the survey ($2.575) to estimate annual cigarette tax revenues generated from youth smoking. We estimated that youth cigarette smoking currently generates $11.5 million in cigarette excise tax revenue for the State of New Jersey. This is more than double the revenue estimated in 2001, when youth consumed an estimated 6.2 million packs of cigarettes, generating approximately $5 million in cigarette excise tax (Delnevo, Muthurajah, Brown, Hrywna and Malka, 2002).

This estimate of total consumption and tax revenue may be conservative since the NJYTS does not include school dropouts or students in alternative schools; higher use of cigarettes has been documented for students in alternative schools (Grunbaum, et al., 1999). Also, cigarette initiation and use tends to be lower in the fall and higher in spring (Wellman and DiFranza, 2003), such that extrapolating monthly consumption from fall 2006 may produce a lower estimate than using data from a survey administered in spring. Lastly, the estimated tax revenue generated from youth tobacco use does not include *other* tobacco products. Cigarettes are the most commonly used tobacco product among New Jersey youth but their use of other tobacco products, such as cigars and smokeless tobacco, is notable and also generates tax revenue.

Conclusion

A direct estimate of youth per capita cigarette consumption, using data such as the NJYTS, provides more depth to the existing knowledge of youth smoking patterns. Per capita consumption is an important indicator of progress since effective comprehensive tobacco control programs have been shown to reduce the prevalence of smoking as well as decrease consumption of cigarettes among persons who continued to smoke.

An effective strategy to reduce youth prevalence and consumption is to increase the unit price for tobacco by raising the product's excise tax (Chaloupka and Wechsler, 1997). The overall decline in youth cigarette consumption in New Jersey reflects, in part, the effects of large increases in the State's cigarette excise tax. New Jersey increased the cigarette excise tax four times in as many years and currently ranks as the highest cigarette excise tax among all US states. Higher cigarette taxes generally continue to increase tax revenue while reducing smoking prevalence and consumption.

In addition to price increases, several strategies can achieve a substantial reduction in youth consumption. These include limiting youth access to tobacco, strong community-based programs concentrating on secondhand smoke, mass media campaigns combined with community-wide interventions, and evidence-based school health programs. However, initiatives to reduce youth smoking must be maintained and accompanied by changes in adult behavior. Policy makers must consider approaches that sustain delayed initiation into adulthood (Glied, 2003). Comprehensive, effective, and sustainable tobacco-control programs which include initiatives like

those described above, as well as tobacco cessation programs, are essential to reduce tobacco-caused disease, death and disability.

Lastly, consistent funding for youth prevention must continue. Despite the considerable success achieved in New Jersey, funding for comprehensive tobacco control was reduced in fiscal year 2003 by nearly two-thirds of its original funding level of $30 million. There is evidence that higher state-level tobacco control funding is associated with lower youth smoking prevalence and cigarette consumption (Tauras, et al., 2005). Earlier in this report, we conservatively estimated that youth smoking in New Jersey generated more than $10 million in state cigarette tax revenue in 2006. Minimally, this tobacco tax revenue should be used to support and expand effective tobacco control initiatives in New Jersey.

References

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More information:

The data in this brief are from the New Jersey Youth Tobacco Survey (NJYTS), a school based survey designed to monitor tobacco use behavior, knowledge, and attitudes. The NJYTS utilizes a two-stage cluster sample to yield representative data on middle (grades 7-8) and high school students (grades 9-12) in New Jersey. The NJYTS was administered in 1999, 2001, 2004 and 2006. The data are weighted to adjust for non-response and varying probabilities of selection. The findings reported here are subject to a few limitations. First, the weighting of NJYTS, used to estimate consumption via population size, is subject to the accuracy of the school enrollment data used to generate post-stratifications. Second, since the NJYTS uses closed ended questions with categorical responses, we could not calculate a true average for numbers of days smoked and number of cigarettes smoked, and instead used the midpoint of the range for each response.

For more information on the NJYTS or the data reported in this brief, contact the Comprehensive Tobacco Control Program at 609-292-9194, or visit their website at http://www.state.nj.us/health/as/ctcp/index.html

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